

WHAT IS CLAIMED IS:

sub a17 1. A ~~plant~~ containing a transposon integrated into its genome, wherein the transposon is selected from the group consisting of a Ds element and an Ac element, and wherein the plant is selected from the group consisting of barley and wheat.

5 2. The plant of claim 1, wherein the transposon is an Ac element.

3. The plant of claim 1, wherein the transposon is a Ds element.

4. The plant of claim 3, further comprising an Ac element.

5. The plant of claim 3, which lacks a nucleic acid sequence encoding an Ac transposase.

10 6. The plant of claim 3, wherein the Ds element comprises a heterologous nucleic acid sequence.

7. The plant of claim 6, wherein the heterologous nucleic acid sequence is a recombinant expression cassette.

15 8. The plant of claim 1, wherein the transposon is integrated at a position to which the transposon has transposed.

sub a2 9. A method of introducing a recombinant expression cassette into a plant, the method comprising introducing a Ds element comprising the expression cassette into the plant, wherein the plant is selected from the group consisting of barley and wheat.

20 10. The method of claim 9, wherein the Ds element is introduced into the plant using a sexual cross.

11. The method of claim 9, wherein the Ds element is introduced into the plant using bombardment-mediated transformation of plant cells followed by regeneration of a plant from the cells.

12. The method of claim 9, further comprising introducing a nucleic acid sequence encoding an Ac transposase into the plant.

13. The method of claim 12, wherein the nucleic acid sequence encoding an Ac transposase is introduced by a sexual cross.

5 14. The method of claim 12, wherein the nucleic acid sequence encoding an Ac transposase is in an Ac element.

15. The method of claim 14, wherein the Ac element is linked to a negative selectable marker.

10 16. The method of claim 15, wherein the negative selectable marker is *codA*.

15 17. A method of creating an insertional mutation in the genome of a plant, the method comprising introducing into the plant a transposon selected from the group consisting of an Ac element and a Ds element, thereby creating an insertional mutation in the genome of the plant, wherein the plant is selected from the group consisting of barley and wheat.

18. The method of claim 17, wherein the transposon is the Ac element.

19. The method of claim 17, wherein the transposon is the Ds element.

20. The method of claim 19, further comprising introducing into the plant a nucleic acid sequence encoding an Ac transposase.

20 21. The method of claim 20, wherein the nucleic acid sequence encoding an Ac transposase is in an Ac element.

22. The method of claim 19, wherein the plant comprises a nucleic acid sequence encoding an Ac transposase.

23. The method of claim 22, wherein the nucleic acid sequence encoding an Ac transposase is in an Ac element

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